Module IV: Building an E-commerce Presence - Comprehensive Explanation

This document provides a comprehensive explanation of the topics covered in the "sdv-Module-IVUpdated.ppt" presentation, focusing on the systematic approach, software, and hardware involved in building an **E-commerce** (Electronic Commerce) presence. All technical terms are presented with their full forms and abbreviations to aid in exam preparation.

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1. A Systematic Approach to Building an E-commerce Presence

Building a successful E-commerce presence requires a structured, systematic approach that addresses key business, technology, and social issues.

1.1. The Visioning Process

The initial step is to define the **vision**—what you hope to accomplish and how. This process involves answering several fundamental questions:

Question	Purpose and Key Considerations
What is your vision?	A succinct statement of mission, purpose, and direction (e.g., Amazon's goal to be the largest marketplace).
Business and Revenue Model?	A preliminary idea of how the business will operate and generate income.
Target Audience?	Identifying *who* the customers are and *where* to reach them. Described by **Demographics** (age, income, location), **Behavior Patterns** (lifestyle), and **Buyer Personas** (profiles of typical customers).
Characterize the Marketplace?	Analyzing the market's structure, size, growth, and competition. This includes assessing **UMVs** (Unique Monthly Visitors) of competitors and their social media presence.
Where is the content coming from?	Content is the foundation of revenue. It can be **Static** (infrequently changing, like product descriptions) or **Dynamic** (regularly changing, like user-generated content).
SWOT Analysis?	**S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats. A strategic planning technique used to identify internal and external factors that are favorable and unfavorable to achieving the objective.
E-commerce Presence Map?	A plan for integrating all customer touchpoints: **Website/App**, **Social Media** (Facebook, Twitter, Instagram), **Email** (marketing), and **Offline Media** (print, radio).
Timeline and Budget?	Establishing a rough time frame with milestones (e.g., a six-phase, one-year plan) and estimating the relative costs of various website components.

1.2. Business and Revenue Models

- **Basic Business Models:** Portal, E-tailer, Content Provider, Transaction Broker, Market Creator, Service Provider, and Community Provider (Social Network).

- **Basic Revenue Models:** Advertising, Subscriptions, Transaction Fees, Sales, and Affiliate Revenue. Many successful E-commerce firms use **multiple models** (e.g., selling subscriptions *and* ad space).

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2. The Systems Development Life Cycle (SDLC)

The **SDLC** (**Systems Development Life Cycle**) is a methodology for understanding the business objectives of any system and designing an appropriate solution. It is the traditional method for building information systems.

The **five major steps** in the SDLC are:

2.1. Systems Analysis/Planning

This step involves identifying three key elements:

1. **Business Objectives:** The capabilities you want your site to have (e.g., display goods, process payments).
2. **System Functionality:** The types of information systems capabilities needed to achieve the objectives (e.g., digital catalog, shopping cart, secure server).
3. **Information Requirements:** The specific data elements the system must produce (e.g., product descriptions, customer **PIS** (Personal Information)).

2.2. Systems Design: Hardware and Software Platforms

This results in a **System Design Specification**, which describes the main components and their relationships.

- **Logical Design:** Describes the flow of information (**Data Flow Diagram**), processing functions, databases, security, and control procedures.
- **Physical Design:** Translates the logical design into specific physical components, detailing the exact model of server, software, telecommunications link size, and backup procedures.

2.3. Building the System

This stage involves the actual construction of the site, with a critical decision being **In-house vs. Outsourcing**.

- **In-house:** Building and operating the site on the firm’ s own servers, requiring internal expertise.
- **Outsourcing:** Hiring an outside vendor to provide services like design, building, or hosting.

- **Build Your Own vs. Outsourcing (Software):**
  - **Pre-built Templates/Tools:** Using user-friendly tools like WordPress, GoDaddy, Wix, or Shopify.
  - **WordPress:** A widely used, cost-effective platform with a sophisticated **CMS** (**Content Management System**) for managing structured and unstructured data. Plugins like WooCommerce enable E-commerce.

2.4. Testing

Testing ensures the system functions correctly and meets the original business objectives. It is often under-budgeted, despite its critical importance.

- **Unit Testing:** Testing individual program modules one at a time.
- **System Testing:** Assessing the entire site, simulating a typical user's interaction.
- **Final Acceptance Testing:** Key personnel and managers use the system to verify it meets all requirements.
- **A/B Testing (Split Testing):** Comparing two versions (A and B) of a web page to determine which performs better in achieving a specific goal (e.g., higher conversion rate).

2.5. Implementation and Maintenance

This final stage involves deploying the system and ensuring its ongoing operation.

- **Maintenance:** The most costly phase of the SDLC, involving bug fixes, updates, and improvements.

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3. Choosing Software and Hardware

3.1. E-commerce Software

E-commerce software provides the basic functionality for an online store.

- **Key Functions:**
  - **Catalog Display:** Showing products to customers.
  - **Shopping Cart:** Allowing customers to collect items before checkout.
  - **Payment Processing:** Handling transactions securely.
  - **Order Management:** Tracking and fulfilling orders.
- **Packages:**

- **Basic:** Simple, low-cost solutions for small businesses.
- **Midrange:** More features, scalability, and integration capabilities.
- **Enterprise:** High-end, customizable solutions for large businesses (**ERP** - Enterprise Resource Planning integration).

3.2. E-commerce Hardware

The hardware choice is determined by the expected demand, which is measured by the number of **UMVs** (Unique Monthly Visitors) and the complexity of the site.

- **Key Hardware Components:**
  - **Web Server:** Stores and delivers web pages.
  - **Application Server:** Handles dynamic content and business logic.
  - **Database Server:** Stores product, customer, and order data.
- **Scalability:** The ability of a system to increase its capacity to handle growing demand.
  - **Vertical Scaling:** Increasing the power of a single server (e.g., more **RAM** (Random Access Memory), faster **CPU** (Central Processing Unit)).
  - **Horizontal Scaling:** Adding more servers to distribute the load.
- **Cloud Computing:** Using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or personal computer. This offers high scalability and flexibility.

3.3. Web Server Software

The software that runs on the web server to handle **HTTP** (**Hypertext Transfer Protocol**) requests.

- **Examples:** Apache HTTP Server, Microsoft **IIS** (Internet Information Services), Nginx.

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4. Security and Payment Systems

4.1. Security

Security is paramount for E-commerce trust.

- **SSL/TLS: Secure Sockets Layer** / **Transport Layer Security**. Protocols that establish an encrypted link between a web server and a browser, ensuring that all data passed between them remains private.
- **Firewalls:** Network security systems that monitor and control incoming and outgoing network traffic based on predetermined security rules.

- **Intrusion Detection Systems (IDS):** Software that monitors a network or systems for malicious activity or policy violations.

4.2. Payment Systems

- **Payment Gateways:** Services that authorize credit card payments for E-businesses, online retailers, and traditional brick-and-mortar stores.
- **Digital Wallets:** Software-based systems that securely store users' payment information and passwords for numerous payment methods and websites.

This comprehensive overview should provide a strong foundation for your exam preparation on Module IV. Good luck!